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ABSTRACT

The experience of Western Michigan University in the design and implementation of a combined information/decision support center is described. The center's design was in response to the outcomes of a long-range planning process, which helped identify unmet user needs. Three types of support were found to be required: education and consulting, decision support, and microcomputing support. Specific goals of the center included the following: reduce the number of user-training hours by coordinating and optimizing the educational offerings and techniques, reduce the backlog of user report-writer requests by helping users to be more self-sufficient; educate users in the use of appropriate software tools to augment their decision making activities; and provide a comprehensive resource for microcomputing support. Major outcomes in implementing the center include the following: seminars are being offered throughout the year covering areas such as data processing services; a video library has been established for educational materials; staff members are learning to use microcomputers so that they can provide user demonstrations; and diskette-based self-instructional products are available for spreadsheet, word processing, and data management. Diagrams illustrate the systems development plan and the conceptual design of the center. (SW)

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THE INFORMATION / DECISION SUPPORT CENTER

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ABSTRACT

Meeting a growing demand for administrative decision support, information center training and consulting services with a limited staff and budget presents a unique problem for the manager of administrative computing services. An organizational structure is required which can merge these two areas, maximize the productivity of the available staff, satisfy the user demands, and provide for necessary growth as the function matures.

As a part of an administrative planning effort, Western Michigan University conceived of a center in which both Information Center and Decision Support activities could be provided. This paper describes the experience of Western Michigan University in the design and implementation of a combined Information / Decision Support Center.

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Introduction

This paper is a description of a combined information and decision support activity presently in operation at Western Michigan University. The paper begins with a brief review of the results of a university-wide planning effort for administrative computing services. A number of the outcomes of the planning activity suggested the need for information center and decision support type services.

The design of the center, a description of the services presently available, and a discussion of implementation techniques are the main components of the paper. The paper concludes with an evaluation of the current status of the center and several comments about its future.

Background

Western Michigan University is a state-supported institution serving approximately 18,000 full- and part-time students. The university offers graduate and undergraduate degree programs in the liberal arts and sciences, business, education, the health fields, and pre-professional disciplines.

Academic and administrative computing are provided through separate centers reporting to separate vice presidents. The administrative computing center houses an eight megabyte IBM 4341 group II. Approximately 100 devices are networked through a 3704/3272/3274 architecture. During the next eighteen months an on-line student information system will be installed. Significant upgrades to the network, the operating system, and most hardware capacities are planned. During the past twelve months the university entered into a long term computer resources management contract with Systems and Computer Technology Corporation (SCT).

Computer Services Plan

A five-year master plan for administrative computing has been prepared. The planning effort involved interviews with some 135 administrators representing each of the then 62 administrative units of the university. The plan was presented using a "needs/resources" concept: the university **needs** applications systems and services; **resources** required to prepare and maintain these systems and services are management, staffing, a physical facility, computing hardware, and computing operating systems.

The plan's outcomes were divided into three major outcomes:

- o Management Plan
- o Operating Support Plan
- o Applications Development Plan

Each of the above "sub plans" contains background data, current situational data, a needs analysis and a set of recommendations. A combination of needs from each of the three areas provided the impetus for a structure which would provide both information center and decision support services.

Needs

The needs which are briefly described in this section are a result of trends which exist in both user communities and in the computing industry. Users are becoming more literate in computing and are also becoming more involved in computing activities; the industry is producing more powerful general purpose microcomputers and more sophisticated batch and query productivity aids.

At Western Michigan University, these trends have manifested themselves in predictable ways. In the user community there is an increasing dependency on microcomputing and a growing need to have a micro/mainframe link. Users are involved in the use of batch report writers and desire a similar tool for real time access to university data bases. In the data center there is a need for productivity tools, a better way to support ad hoc reporting requirements, and a more formal structure for providing user education and consulting on both existing and future data center products.

Finally there is the need to respond to a growing applications backlog. A multiple year profile of manpower needs versus available manpower resources will, in almost every case, clearly demonstrate a need which is significantly greater than the available resources. This is also the case at Western Michigan University . The solutions to the dilemma are to either ignore the situation or help the university find alternative solutions to the problem within the constraints of both limited dollars and limited human resources.

These needs are part of a general evolution to more user centered data processing, an evolution that would have been called distributed data processing in the past. The problem is that supporting this evolution requires unique skills which are typically not available in the user community and frequently not available in data centers.

Why an Information/Decision Support Center?

The decision to create the center as a solution to the issues described above was not an obvious one. It was the result of evaluating several alternative solutions and finding each of them lacking in some significant way.

Simply adding additional programming staff to help reduce the backlogs could have helped but for two reasons: (1) there was no additional funding available to hire additional personnel and (2) the needs for

user training and microcomputer support were equally as strong as the need for traditional systems development support. Clearly, a response was needed which would somehow address all of these needs in a comprehensive way.

Consideration was given to a plan which would more closely involve the users in the development and processing of their own requests by teaching them the use of a report-writing language. While the essence of this solution was attractive and was directed at a significant problem area vestiges of past experiences in this area suggested caution. In a previous drought of programming service several aggressive users had begun programming their own applications. They soon moved beyond producing reports and were creating intricate information systems which were fragile, undocumented, and impossible to maintain. Some effort to provide appropriate control and supervision would have to be found if this activity were to be encouraged again.

It was felt that continuing with the current system, or providing a minimal effort response due to lack of resources would jeapordize data processing's credibility and damage current and future development plans. It was also obvious that while some demands for application systems could be delayed, the user needs in the area of ad hoc reporting and microcomputing support would have to be addressed immediately.

The concept of a coordinated effort which would assist users to become more self-sufficient, and which would provide additional support to several areas not addressed by the traditional applications development process seemed to incorporate the good points of all the alternatives. This effort would be designed to maximize the effect on the users needs and to minimize the impact on the data processing staff. User education, consulting, microcomputing assistance, and support for ad hoc reporting and query would be the areas of focus.

The Design of the Center

The ultimate design of the center was in direct response to the outcomes of the long-range planning process. When the list of unmet user needs was compiled a group of requests stood out as not requiring traditional application development support. When this list of requests was evaluated three major categories of support emerged and became the central elements of the Center's mission. Below are outlined those three areas and the needs which they encompass.

Education and Consulting

- To provide users with instruction in the effective and efficient use of the data processing resource.
- To provide a resource for resolving problems that users experience with applications.

Decision Support

- To provide users with the tools to access and explore their data in their own way.
- To provide efficient response to ad hoc user requests for reports and information.

Microcomputing Support

- To assist users in defining the applicability of a microcomputer in their environment.
- To support users wishing to establish micro-to-mainframe communications.

Planning for the Center

Because the Center is a pilot project, it's resources are intentionally limited to the support of it's immediate first year goals. Future budget and resource allocations will depend upon the success of the pilot project.

Three full-time staff are assigned to the Center. They were chosen based on their skills and experiences related to the identified mission of the Center and on their demonstrated ability to work well with users. The manager has significant microcomputer, user training and systems analysis experience as well as a knowledge of the local report writer software. The two information specialists have individual strengths. One has considerable experience with systems analysis and user training and the other has operations experience and expert knowledge of the report writer software. One of the implied project goals is to cross-train all of the Center staff to a level of competence in each of the other staff member's strengths.

Hardware support for the Center initially consisted of existing terminals for each of the staff. Three microcomputers were subsequently added.

Mainframe software which is directly related to the Decision Support activities of the Center are EASYTRIEVE, DOCUMENT COMPOSITION FACILITY, SAS, and MANTIS. Microcomputer software consists of WORDSTAR, MULTIPLAN, dBASE II, and communications software. Additional software in the form of videotape and diskette-based training courses are available as self-instructional aids.

Physical space for the center currently consists of staff offices for individual instruction and consulting, a video room for viewing tapes and a conference room for group sessions. The entire data processing center is scheduled for remodeling work in the near future. In the remodeling plans are a dedicated user training and demonstration area, a library, and local conference facilities.

Familiarity with system security and privacy of information policies is essential for all of the Center staff. As more users are given access to the computing system to produce their own reports and querys it is the Center's responsibility to ensure that the proper authorizations have been secured by the users. Also, with the increasing frequency of microcomputer users wanting to transfer files between their machine and the host, the Center personnel must promote policy and educate users to ensure data integrity in all production systems.

Justification for the resources allocated to the Center will be evaluated over this pilot period based on the Center's ability to provide improved support to users in non-traditional areas, reductions of existing backlogs of user requests, and expanded support for microcomputing. Specific goals are as follows:

- o To reduce the number of user-training hours by coordinating and optimizing our educational offerings and techniques.
- o To reduce the backlog of user report-writer requests by encouraging, training, and supporting users to be more self-sufficient in this area.
- o To educate users in the use of appropriate software tools to augment their decision-making activities.
- o To provide a comprehensive resource for microcomputing support.

Implementing the Center

The literature available which discusses implementing this type of facility offered some sage advice - GO SLOWLY. In order to maximize the probability of success the initial service offerings were limited to those skills that the staff had already mastered. User areas where the Center could have the most impact in the shortest amount of time were targeted.

While the Center and it's activities are openly discussed, it is not being actively promoted to the user community. The experiences so far have been that word-of-mouth referral has provided a workload that barely allows time for planning and evaluation.

Below is a brief list of the major accomplishments-to-date:

Education and Consulting

- o A series of seminars are being offered throughout the year. They cover data processing services, EASYTRIEVE, and managing DP in the user area.
- o Consulting and referral communications are being restructured.
- o A video library has been established for educational materials.
- o User profiles are being developed to aid in information and news distribution.

Decision Support

- o Several Users have been given on-line report writer capability on a trial basis. This was previously all batch.
- o The MANTIS productivity aid has been used to generate CICS data entry, browse, and query applications for systems which needed to be developed quickly.
- o A specialized download capability was developed for a microcomputer application in the accounting department.

Microcomputer Support

- o Staff members are all learning to use the microcomputers so that they can provide user demonstrations.
- o Assistance is being supplied to users who are planning to purchase a microcomputer.
- o Diskette-based self-instructional products are available for spreadsheet, wordprocessing, and data management products.

Evaluation

It should be no surprise that users at the University like the concept of an information/decision support center. The center is designed to provide a great deal more education, consulting, and general non-technical interaction with the computing center than in the past. It is a service oriented concept, responsive to the kinds of things that users want and need to do, and to both industry wide and university specific trends.

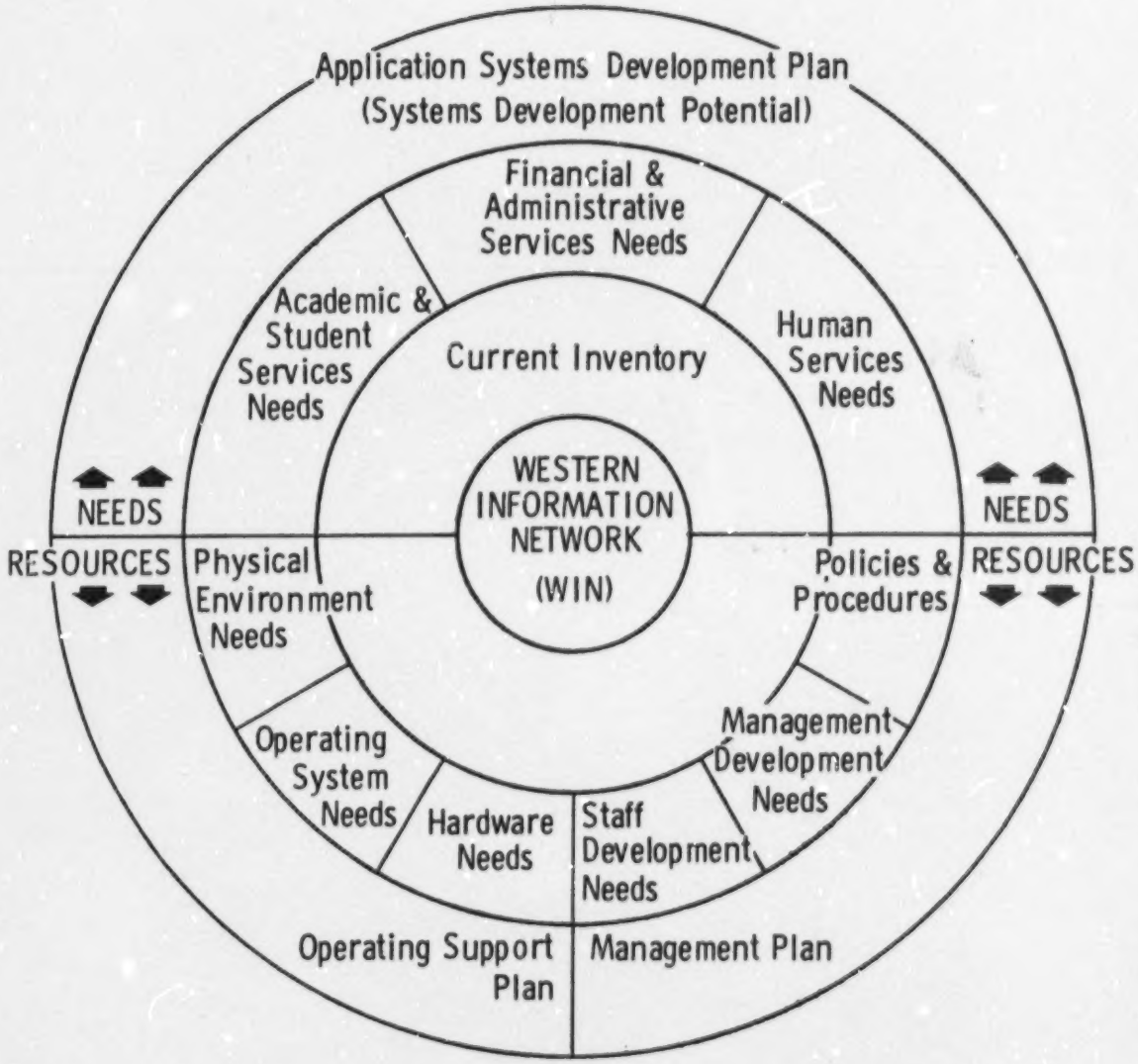
A formal evaluation has not been conducted. However, a number of specific cases exist within the University where the center has clearly accomplished its mission. The accomplishments outlined in the previous section are indicative of the types of activities in which the center has been and will continue to be involved.

The center's experiences to date suggest that one item be added to the list of things to be planned for when an organization is developing a center. No matter how much effort goes in to planning for workload requirements and staff resources, it would appear that workload growth for the center is relatively unpredictable. A partial solution to this problem is to return to the technique of managing user expectation, and, of course, the best time to begin this process is during the planning period. See the Planning section of this paper for the remainder of the items to be considered when planning a center.

Several problems exist. Any assumptions that were made relative to user needs remaining confined to the center's skill set or to the products endorsed by the center were incorrect. Control and response to divergent needs has been and will continue to be a problem. The idea

behind having an "expert" in report writers was that this individual would provide decision support services by actually preparing a limited number of reports and spend the remainder of his time educating the users to prepare their own. The opposite has happened. A final problem, similar to that faced by a user services group in an academic computing center, is that of managing the situation where some users require a great deal of support while others are so advanced that they desire more access to the host and to data bases than the computing center is prepared to provide.

This paper concludes with a few remarks about the future. Experiences to date have confirmed that a combined information and decision support center is a viable component of the computing services at the university. The service will continue to grow; the issues of control and management of the growth will remain as the most difficult to resolve. Staffing is and will remain a problem—alternative solutions such as leveraging user groups and/or the skills of other computer center employees will have to be found.


Application Systems Development Plan
(Systems Development Potential)
Financial & Administrative Services Needs
Academic & Student Services Needs
Current Inventory
Human Services Needs
WESTERN INFORMATION NETWORK (WIN)
NEEDS
RESOURCES
Physical Environment Needs
Policies & Procedures
NEEDS
RESOURCES
Operating System Needs
Hardware Needs
Staff Development Needs
Management Development Needs
Operating Support Plan
Management Plan

CONCEPTUAL DESIGN OF THE INFORMATION/DECISION SUPPORT CENTER

Education and Consulting

- Computer literacy education
- Consulting
- Existing applications education
- Distributed data entry

Decision Support

- ad hoc reporting
- Faster applications development
- ad hoc query

Microcomputing Support

- General support
- Micro/Mainframe link